

# The Impact of Whole Brain Literacy and Interpersonal Communication Interventions on Competency-Based Performance of Individuals and Groups in an Architectural Design Department: A Case Study at Architects 49 Ltd.

Virachai Vongbunsin<sup>1</sup>

## Abstract

*The main objective of this study is to improve the company's performance by focusing first on its learning style, competency-based performance and organizational climate and then determining the potential for Organization Development Intervention (ODI) programs to achieve that goal. Initial discussions with the company's management revealed that low productivity and a high turnover (as a result of the resignation of senior architects) were the main organizational problems. Furthermore, the rapidly changing global environment called for more efficiency. Interpersonal Communication (IC) and Whole Brain Literacy (WBL) interventions were chosen as the tools with the potential to improve learning, self organization, and diversity management within the organization. Qualitative measurement using in-depth interviews and observations and quantitative measurement using self-assessment survey questionnaires were used for evaluating, both pre- and post- interventions. The results show that IC and WBL have had a significantly positive impact on both individual and group competencies. Regarding the company's working climate, whereas IC has had a substantial positive impact on individuals and groups, WBL only positively impacted individuals; WBL had a slightly negative effect on the groups. A set of recommendations was proposed. They include using the Iterative OD Process Model for Organizational Improvement and Sustainable Development.*

**Keywords:** OD Intervention, Learning Style, Competency-Based Performance, Organizational Climate, Managing Diversity, Interpersonal Communication, Whole Brain Literacy

## Introduction

In Thailand, both the government and private sector concur that the January 1, 2010 ASEAN Free Trade Area (AFTA) has been benefiting the Thai economy. Yet, while it provides great opportunities, it also involves challenges. As an import duty elimination scheme, AFTA is paving the way for the 2015 ASEAN Economic Community (AEC), whose aim is to establish a single market and production base with goods, services and skilled labor moving freely within the Association of Southeast Asian Nation (ASEAN). One service area that has been slated for liberalization under so-called Mutual Recognition Arrangements (MRA) is architecture, which means that architectural

design services in Thailand may be positively and negatively impacted by AFTA and the AEC, depending on the level of the comparative competitiveness between Thai's architects compared with its ASEAN counterparts.

Indeed, under the World Trade Organization (WTO) principle of national treatment, "*the principle of giving others the same treatment as one's own nationals*," ASEAN architects must be given equal treatment. In short, Thai architects will have direct competition from foreign firms and individuals who are better known in the area of architectural design and may offer more attractive fees. Moreover, as more foreign investors and developers target Thailand, they may want to use their own architects. Architectural design professionals whom had been hitherto given preference will no longer be protected as the liberalization process gathers momentum, which will create a far more

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1. Virachai Vongbunsin is a graduate of the Ph.D. OD program at Assumption University. Currently on the Staff of the Deputy Minister of Transport, he is also a part-time lecturer at Huachiew Chalermprakiet University, Faculty of Business Administration.

competitive environment for Thai architects in the near future.

Another challenge which architectural companies are facing is globalization. With technology removing boundaries between nations, architectural design trends are most likely to be universal and, as a result, different strategies more and more difficult to develop in order to keep the uniqueness of the individual architect - and the architectural firm.

These clearly are two issues which A49 Architect (A49), a Bangkok-based company established in 1983 to provide truly professional and comprehensive services in all fields of architecture has to deal with. This study will focus on this company. Specifically, it will concentrate on the architects of the Public and Commercial Architectural Design Studio of the Architectural Design Department at A49.

A49 Philosophy can be summarized as follows: „uniqueness’ and „master pieces of work’ with „clean and simple elegant lines

Two problems were found to significantly affect the performance of A49. The first was low productivity as the contribution ratio of each architect to revenue was lower than at other firms (A49 1:2 versus 1.3 industry average). This difference stems from A49 architects preferring to redesign everything, where normally, architects will use the same details in designing doors, windows, staircases, toilets, etc. The second problem concerns the consequences of the resignation of senior architects, which affected project continuity and knowledge transfer; two problems directly linked to team leader leaving the organization with projects unfinished.

These organizational issues were discussed with the management and an analytical framework developed to define the problems more clearly particularly the factors impacting operational efficiency. This research investigates the impact of the Organizational Development Interventions (ODI) undertaken to address these issues.

## ***Review of Literature***

This section provides a review and synthesis of the relevant theories used in the study.

### ***Managing Diversity***

Managing diversity means managing for all differences, both visible and non-visible (Kandola & Fullerton, 1994) which enables everyone in the workplace to perform at their potential (Thomas, 1990). This creates a productive environment in which everybody feels valued, where their talents are fully utilized, and in which organization goals are met for more competitiveness (Cox & Blake, 1991) and better performance (Pitts, 2009) at all levels.

Barriers and factors influencing diversity initiatives (Wentling and Palma-Rivas, 1998) are described as being aware of and understanding the environmental changes that impact on an organizations goals so that diversity can be managed for positive effects. Wentling and Palma-Rivas (1998) also suggested that strategies and implementation of managing diversity, including components of effective diversity training programs (Rynes and Rosen, 1995) being successfully demonstrated. Successful diversity training depends on many organizational factors; especially, commitment and support from top management (Wheeler, 1994). Effective diversity management results in greater organizational productivity, and higher performance of individuals and groups. Also, an increased alignment of goals and activity results in an improved organizational climate.

### ***Learning and Self-organization***

Organization learning is the process of learning within an organization which facilitates greater alignment among its strategies, culture, and competitive environment (McLean, 2006), thus individual learning is linked to organization learning. Argyris & Schon (1996), emphasizes double-loop learning where individuals are comfortable with managing many different points of view, Morgan (1998) emphasizes organizations that are capable of functioning when major sections become immobilized. Pace

(2002) suggests continuous learning opportunities are created when situations promote collaboration and team learning, Senge & Kleiner, et al., (1994), when an organization is continually expanding its capacity and produces results which people at all levels, individually and collectively, care about, (also Ratner, 1997).

Knowledge is created through the transformation of experience and results from the combination of understanding and transforming experience. There are six stages of learning to create a learning environment (Buckler, 1996): Ignorance, Awareness, Understanding, Commitment, Enactment, and Reflection; however, it depends greatly on the effectiveness of managers and team leaders to create an environment where individual, team, and organizational learning are facilitated.

To promote a learning organization is to emphasize leadership, management, culture, systems for communication, information, and knowledge. Enhancing double-loop learning (Argyris & Schon, 1996) depends on individuals being able to take a „double look’ at the situation by questioning the relevance of operating norms.

Organization learning builds the collaboration and continuous improvement programs that promote organizational performance, creativity and innovation, employee productivity, and a reduced absenteeism (Redding, 1997). Pace (2002) posited that learning organization creates continuous learning opportunities, promotes dialogue and inquiry, promotes team learning and collaboration, empowers people to evolve a collective vision, establishes systems to capture and share learning, and connects the organization to its environment, finally, it provides strategic leadership for learning. For individual employees, organization learning has a significant effect on areas including continuous improvement, customer focus, employee commitment, and overall work performance (Pace, 2002).

#### *Organization Development Interventions*

OD interventions (ODIs) aim to change specific areas or parts of organizations. These targets of change can be classified as the organizational issues that the ODI is intended to resolve and the level of organizational system at which the intervention is expected to have a primary impact (Cumming & Worley, 2005, p.147). There are four types of OD interventions which can be briefly described as follows:

(1) *Human Process Interventions*: They value human fulfillment and expect that the effective organization follows from the improved functioning of the people and organizational processes. They include five interventions, namely, Process Consultation, Training and Development, Coaching, Team Building, and Third-Party Intervention.

(2) *Techno-structural Interventions*: They stress both human fulfillment and productivity; and expect that appropriate work designs and organization structures result in effective organizations. They are concerned with restructuring organizations through Structural Design, Downsizing, and Reengineering.

(3) *Human Resource Management Interventions*: They focus on the people in organizations, believing that organizational effectiveness results from well-integrating employees into organizations. They are concerned with performance and include Goal Setting, Performance Appraisal, and Reward Systems.

(4) *Strategic Interventions*: They link the internal functioning of the organization to the larger environment and transform the organization to keep pace with changing conditions. They bring about a fit between Business Strategy, Culture, Structure, and the Larger Environment. They derive from the disciplines of Open-Systems Theory, Organization Theory, Strategic Management, and Economics. They include Mergers and Acquisitions, Integrated Strategic Change, Alliances, and Networks.

### *Cognitive Styles and Whole Brain Literacy (WBL)*

Whole Brain Literacy (Tayko, 2007) refers to individual(s) making use of the four different thinking styles of the whole brain functioning, iterating their thinking to seek for possible choices, set priority actions, encourage participation, manage, evaluate and give feedback, all consistent with the organizations goals and objectives, both present and future.

Tayko (1997) suggested that in this globalization era of rapid, dynamic and uncertain changes, and the third wave – Information age, WBL - the ability of the individual to process information from within the self-system and the environment using different thinking styles (different from IQ or capacity) enables the individual to manage change elegantly in fast changing times. By utilizing the WBL framework and processes, Tayko and Reyes (2010) defined the Individual-Institution Connection as a linkage between the “Individual” person and the “Corporate Person of the Institution” thinking through, moving/iterating from one thought to the next and iterating or repeating the process in the various style quadrants, from one zone of the brain to the other.

Fortunately, every individual is able to use WBL which leads to the better understanding of self and others and a better alignment between different thinking preference behaviors which are essential for being effective in managing diversity in the work place. WBL also leads people to be more Choice Seekers and use Break Through decision making which enhance double-loop learning, (Tayko, 2007) and leads to improved learning and self-organization (Morgan, 1998). As concluded by Jandt, (2007), enhancing interpersonal communication will lead to improved management of diversity.

### *Interpersonal Communication (IC)*

Jandt (2007) described communication as a systematic procedure in which individuals have interaction by creating symbols and

translating/interpreting their meaning. Interpersonal communication is also defined as the interaction among people that create socialization, especially in the organization (Pearce, 1989). Individuals have different perceptions; the resultant behavior may cause communication problems.

### *Competency-Based Performance*

Competency is a person-related concept that refers to the dimensions of behavior underlying competent performance (Woodruffe, 1991). Competency profiles convey those underlying characteristics of a person which result in effective actions and, hence, superior performance for management roles (Boyatzis, 1982).

### *Organizational Climate*

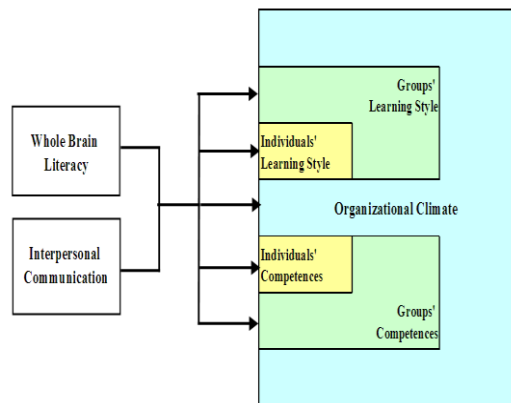
Organizational climate is defined as a psychological state strongly affected by organizational conditions and linked organizational variables in the cause-effect model. The set of variables that influence and are influenced by climate concern individuals' perceptions of how their local work unit is managed, and how effectively they and their day-to-day colleagues work together, or how they interact with each other within the organization and with other outsiders including customers. Climate is much more in the foreground of organizational members' perceptions, whereas culture is more background and defined by beliefs and values (Burke & Litwin, 1992).

In order to bring about an improvement in organizational performance Two interventions were considered the first addressed issues concerned with the understanding of cognitive style and the way different individual styles interacted and caused misunderstandings and conflict. The second intervention involved interpersonal communication and the way organizational activity causes obstacles to effective interpersonal communication.

## Conceptual Framework

Focusing on the relationships between the defined organizational problems and the different organizational theories, a conceptual framework was designed to bring together the salient variables and their relationships.

Figure 1: Conceptual Framework



Source: Created by the Author for this Study

The conceptual framework was designed to match the action research requirements of three organizational groups using a test-retest methodology: Group A (control group) without any intervention or treatment; Group B with IC Intervention, and treatment; Group C with both IC and WBL interventions.

## Methodology

All qualitative measurements used in-depth interviews and observations while the quantitative measurements relied on self-assessment survey questionnaires. Both forms of measurement were used for evaluation, before and after each intervention. SPSS-paired sample *t*-tests were employed to analyze the data and determine the impact of the ODIs. The level of significance applied in this study was set in such a way that the probability of error was less than 5% or  $p < 0.05$  if any difference is to be statistically significant.

The respondents in the ODI program were arranged not only by grouping them according to similarities in terms of gender, age, education, seniority, year in job but were also picked from

each sub-system (A49's departments) equally as much as possible in order to minimize the within /between differences among the three groups using demographic variables (Clapp, 1993).

In this study, the following sets of questionnaires were used for both Pre- and Post-ODI evaluations of each Group A, B, and C. They provided a valid and reliable base for the "*t*" test comparisons:

- The Kolb Learning Style Inventory (LSI) of Hay Group (Kolb, 2005) to assess individual learning style preference. It involves four scales: Abstract Conceptualization (AC-*thinking*), Active Experimentation (AE-*doing*), Concrete Experience (CE-*feeling*), and Reflective Observation (RO-*watching*).

- The assessment questionnaire, "The BrainMap" from Brain Technologies Corporation (BTC, 2006) to capture respondents' individual thinking style preferences; I-Control; think about Stability & Certainty as "*I understand, therefore, I control;*" I-Explore; think about Ingenuity & Creativity as "*I envision, therefore, I expect;*" I-Preserve; think about Relation & Integration as "*I respect, therefore, I defined;*" I-Pursue; think about Result & Productivity as "*I want, therefore, I act.*"

- The Competency Rating Form for Leadership Competencies and the associated Behavioral Indicators Version 6p of Evidence-Based Management Development Ltd (2004) to capture 21 individual competencies.

- The Organizational Climate Questionnaire Version (1c) of Organization and Management Development Ltd (Clapp & Franklin, 2006), to capture six dimensions of Organizational Climate: Clarity, Challenge, Change Orientation, Autonomy, Recognition, and Involvement.

The OD Interventions included 2 phases.

**Phase I:** Interpersonal communication whose objectives were to improve individuals' interpersonal behavior; reduce barrier between staff from different levels; changing individual attitudes and perceptions; create leadership, trust and creativity in communication; and understand

effective communication processes and interpersonal communication.

The ODI Process sought to examine and observe who are the influencer and/or the motivator of the group, provide information and promote discussion about Effective Interpersonal Communication; encourage and explore strategic vision by brainstorming and time management, demonstrate communication barriers and obstacles, and consider the meaning of body language and eyes contact . It also included group reflection to discuss individual understanding of perceptions towards Interpersonal communication and experience interpersonal communication conflicts.

*Phase II:* Whole Brain Literacy whose objectives were to understand the whole brain functioning and WBL; learn about the different thinking preferences involved in WBL and the effect on behavior; and “think/act” as a group in order to take advantage of the different styles.

As to the ODI Process, it had as its goals to provide information and promote discussion about Whole Brain Literacy, encourage and to experience forced change to individual thinking style, and practice iteration of individual and group styles. It also included group reflection to give individuals an opportunity to reflect on their understanding of WBL

Several study evaluations were conducted; the first one before the implementation of Phase One to check the homogeneity of the sample groups; a second one two months after the Implementation of Phase One to monitor progress of the intervention; receive feedback from participants as to the relevance of the intervention; consider if any modifications were necessary to improve Implementation processes; and proceed to a detailed planning for Phase Two implementation.

A third evaluation took place two months after the Implementation of Phase Two to monitor the progress of the intervention; receive feedback from the participants as to the relevance of the intervention; and consider

Feedback and any effects on the data analysis; and prepare a report for the organization’s management

### ***Discussion of Findings***

To compare the impact of different ODIs, sampling was separated in to three groups. The results of Pre-ODI evaluation showed that, for both individuals and groups, there is no significant difference among the three groups on all variables (Learning Style, Competency-Based Performance, and Organizational Climate).

#### ***Learning Style***

The quantitative results, both before and after interventions, showed no significant difference in Learning Style among the three groups. Kolb’s Learning Style profile of A49 showed that people in A49 are most likely to be of similar style, as expected in the initial diagnosis. The majority of individuals having an Abstract Conceptualization (AC - *Thinking*) style preference (Kolb, 2005). The result was confirmed in Pre-ODI evaluation using BrainMap where the basic profile of Group C showed the majority of their profiles in the I-Explore quadrant.

Individuals with an Explorer/Visionary style tend to have their own personal goals high up on the agenda; furthermore, organizational goals that do not have a personal reward or meet some personal goal tend to be of second priority. In particular, this style tends towards a personal goal orientation that is “self-selecting” and is made worse by a climate where “*Clarity of Purpose*” is low. Their motivation is intrinsic and they are not easily motivated by extrinsic goals of the organization except where they overlap. So, while agreeing with organizational change, their behavior tends towards the support of their own goals. Although individuals in the organization may welcome change and have similar views to others about the future, they do not feel empowered to act due to low climate

### *Autonomy.*

From the qualitative feedback, it was found that the senior managers were not surprised that people in A49 have a homogenous style and they actually concurred with the result of the Learning Style measure (the majority is AC) which showed that A49's profile is mainly in one quadrant. They also realized that in A49, people decide and agree very fast because they have the same style. This finding was again confirmed in the observations from the communication workshop where both group B and C restarted the game immediately, without rethinking or discussing any new method.

The ODI programs which provided new knowledge through training/workshop activities did not change the characteristics or learning style significantly. This finding coincides with that of Kirton (2006) who suggested that, if individuals are required to operate in a different mode to their preferred style, then personal and organization efficiency suffers. This may account for some of the manpower problems experienced by the management of A49.

The previous strategy which focused on creativity required a large number of "Explorers". When a more cost-effective strategy is pursued, concern for cost, time scale, and the quality of the end-product will become a priority. Under such conditions, a new set of skills will be required to match the new strategy; the lack of "Pursuers" and "Preservers" could be a problem in terms of organizational performance due to the attention to detail necessary for the production of quality end-products. These changes will require careful attention to recruitment and succession planning for existing staff.

### *Competency-Based Performance*

Incremental Rate statistics were used to present the impact of ODI and the results showed that the Individual Competency-Based Performance of Group C (9.22%) has a better result than Group B (4.37%), and that both Groups C and B have better results than Group

A (2.27%). In terms of Competency-Based Performance, this showed that Group C (8.91%) had the best result, followed by Group B (2.74%), and then Group A (0.86%). All of these results were significant ( $p < 0.05$ ).

In addition, the research findings showed three Competencies: *Developing Others*, *Delegation*, and *Strategic Influencing* as always appearing in the lower quartile of the scores, indicating that individual development and the ability to influence and change the direction of the organization is low. This supports the lack of *Autonomy* and *Empowerment* indicated by the climate dimensions. The competencies for *Flexibility*, *Tenacity*, and *Strategic Awareness* appear in the top quartile for all individuals and the three groups, indicating behaviors that are pervasive. On the positive side, individuals show abilities reflecting preparedness for change and the commitment to see it through to implementation. However, the downside supports a position where excessive *Tenacity* tends towards near obsessive concentration where issues are pursued relentlessly, beyond the point of economics or any other form of return. The interventions do not moderate *Tenacity*; it remains in the top quartile.

The qualitative feedback from management confirmed that the middle-level managers find it difficult to engage in a process to convince others to accept and commit to a strategy that involves more efficient and cost-effective ways of working. The lower-level employees always focus on the cultural priority of Conceptual Design. There has been no discussion of vision and future possibilities to change the perceived cultural priorities. This indicates that senior managers at A49 have yet to convince the more junior staff of a new strategic direction that the organization is committed to pursue. This shows up again in Organizational Climate as lower scores for "*Clarity of purpose*" and "*Change*". The individual characteristics at A49 also reflect the need to manage the self. They need to ensure the effective use of time, opportunities, skills, and knowledge. However, at A49, they focused

only on the technical aspects of efficiency; i.e., 3D Computer Aid Design program.

As far as the two interventions are concerned, implementing only the IC intervention improves the overall competency performance for both individuals and groups by some 2% over that of the control group. When both the IC and WBL are implemented, a further 4% is added to the improvement in competency and 6% over the performance of the control group. This shows that implementing both WBL and IC interventions improves both Individual and Group Competency-Based Performance than if only the IC intervention is implemented.

### *Organizational Climate*

Organizational Climate's Incremental Rate for individuals showed that Group C (9.01%) has the best result, followed by Group B (7.95%) and, finally, by Group A (6.52%). The Group Incremental Rate showed that Group B (8.64%) has the best result, followed by Group C (8.24%) and, lastly, by Group A (7.08%), all of which are significant at  $p < 0.05$ .

However, the research findings reveal that *Clarity of Purpose* and *Change* are the areas in need of improvement; therefore, the organization needs to address these improvements for all parts of the organization. For all groups *Clarity of Purpose*, *Change*, and *Autonomy* appear in the lower half of the score for Group Climate. The low position of *Clarity*, while improved by the intervention activity, does not achieve a position in the upper half of the scores. The implication of lack of *Clarity* for both processes and goals is a major concern when considering the focus of *Change*. In particular, the impression from both management and staff is that they are both waiting for something; the managers are waiting for the start of some changes to the way the organization operates, while staffs are waiting for some indication from the managers as to the new goals and pathways to be pursued. *Autonomy* located in the lower half suggests that the staff do not feel empowered to pursue any change that may be contradictory to the position

of their senior managers. Thus, while the individual may see the need for change, such as project costs being too high, the low score for *Clarity* of objectives and support for *Change* means that they do not feel empowered to act.

The qualitative feedback from management confirms the result that, at times, employees do not understand the business goals and the requirements of their job. Improved interpersonal communication should be developed in both formal and informal ways and more time should be spent in one-on-one conversations to develop both clarity and commitment. However, to ignore customer criticism regarding the high fees indicates an ongoing weakness in Strategic Management and Leadership. The problem becomes how to retain their professional position while reducing the cost of the product. If necessary, quality has to be adjusted to meet the level required by the marketplace (the market is price-sensitive and not driven by quality). In addition, management thinks that most people in A49 do not want to change since they are in their comfort zone. Moreover, the seniority system in the organization reflects the low score of *Change* since they feel much better if the change is for the organization as a whole, and not for the individual person. All of these issues show a lack of clarity in strategic planning and must be resolved by senior management before commitment of others in the organization can be expected.

### *Management View*

Using the content analysis of the qualitative data, a number of clusters emerged, most of which involved effects; e.g., Efficiency, Professional Development, Recruitment, and Skill Diversity rather than causes, e.g., Vision, Policy, and Commitment. There are two factors that seem to be the cause of most of the effects; one concerns the external environment, the other the internal environment of the organization. These factors are discussed in more detail, as follows:



1) *The External Environment* – the international competition where inward investment can be expected is associated with an emerging national demand. Much of this information is important when considering transformational change in that it provides the basic information that outlines market goals, organizational structure, and the number of staff and skills required. Without this view of the market, requirements the organization is stuck in the groove where history determines the view of tomorrow. Furthermore, there would appear to be an overemphasis in training for creative design skills which stems from the view that creative design is of most value to the organization. The analysis shows that other skills such as project and financial management could be improved; in which case, training programs should be adjusted to accommodate these additional skill areas.

2) *The Internal Environment* – while much of the work and inputs to the vision should come from the Directors in the organization, the senior managers as leaders must be seen to be committed to the agreed views and cannot be seen to be at variance with any of the views communicated. The leadership competencies show a lack of *Strategic Influencing* which does not help with involvement, commitment and communication of any vision.

#### *Observations on ODI*

The purposes of ODI Implementation, both IC and WBL, was to improve the communication skills of individuals within the A49 organization and to understand the implications of the different cognitive styles when managing diversity

From the research observations and the participants' reflections, it was evident that the participants understood the need for change. They knew the strengths and limitations of themselves and others in the organization.

They had also learnt that it could be better to optimize their work by choosing individuals with the appropriate dominant thinking preference

rather than work with those with inappropriate dominant thinking preference. The latter approach leads to low productivity and stress for the individual due to the "Coping" requirements of the mismatch between the personal preference and the demands of the work

In effect, the more people utilize, accept, and understand thinking style preference, the better is their skill in managing diversity, according to the concept of WBL (Tayko 1997)

#### ***Conclusions and Recommendations***

The findings show that the IC and WBL Interventions have improved the Organizational Climate in all three groups at both Individual and Group level. Furthermore the ODIs also have had a positive impact on Competency-Based Performance at both individual and group levels. However there was no significant change in individual Thinking Preferences and Learning Style. Thus, the stability of the Thinking Style Preferences of the three groups reinforces the view that cognitive style is a stable part of the individual's personality profile (Clapp, 1993).

Turnover and productivity rates show little improvement after ODI implementation according to management interviews. However, it may be too early to consider those outputs as only two months have passed since the interventions were applied. Furthermore, without a strategic plan that addresses the uncertain economic and political situation, the skills and staff numbers actually required for the future remain unclear.

Individuals and groups show an improved Organizational Climate after implementing the ODIs. They value themselves as having a better performance after implementing IC and WBL interventions. They are ready and think positively about changing themselves. Individuals and groups have a better understanding of self and others' thinking preference. They value the difference and learn to iterate thinking preferences using their whole brain to meet their purposes. They are ready to be in a more diversified environment.

The organizational members value better Climate and better Competency, but management considers that little has changed after the ODI. The findings show that A49 is more likely to be homogeneous, which works best in a relatively stable environment (Kirton, 2006).

Based on the initial sensing, (High Turnover, Low Productivity and Diversity in Global Supply Chain) plus the challenge of the upcoming AEC, together with findings that A49 has low diversity, misalignment of goal/objective (purpose) – both personal and organizational – IC and WBL Intervention were used as ODI tools to increase understanding of individual differences and so improve the ability to communicate efficiently and effectively.

Regarding the Learning Style, there was no significant change in any of the pre- and post-tests, indicating that style as a stable dimension of personality and statistically is linked to work preferences. The past recruitment of people with preferences for conceptual design results in a minimum of diversity. The majority of the staff has an Explorer/Visionary Style, including the most senior people (only one out of seven of the most senior individuals is not an architect). This results in a lack of diversity and produces particular behaviors that dominate the organization. Many of these Explorer-Visionary characteristics are more suited to a research activity than to an efficient and effective organization operating in a competitive marketplace. Furthermore, these behaviors are reinforced positively when coupled with climate variables that reflect the dominant interests of the more powerful individuals/groups in the organization. This leads to a position where the diversity of thinking styles is potentially less than required to optimally solve the organization's problems. Moreover, junior staff members are dominated by seniors who are more interested in architectural professionalism than commercial customer-objectives.

Explorer/Visionaries work organization lacks structure and is not easily understood in relation to commercial progress, so it is difficult to add

resources to a project should the need arise. Furthermore, time is not of the essence; novelty issues are. For example, project progress, while good at the start of a new project, gets slow towards the end, even reaching a point where further resources cannot easily be deployed to prevent failure.

The dominance of architectural professionalism generates a privileged status (Elitist Culture) where the most senior architects are seen to have the most power and influence which makes the needs of the organizational structure, goals, and process requirements seem less valuable.

To continue to recruit similar people will cause the past and present difficulties to continue. Hence, it is not manpower planning issues that need to be resolved but the lack of a clear commercial strategic plan that can be matched to an internal structure that can be staffed by individuals with appropriate skills and competencies. Such a plan will impact both the recruitment and retention policies.

Small changes in the post- and past values for the control group lacking in significance indicate a low contribution from other external variables; thus, most of the changes in the treatment groups can be attributed to the effects from the interventions.

The competencies, overall, showed improvements of 2% over the Control Group for the IC Intervention, and some 5% (over the IC intervention) for the WBL Intervention. While all are significant, they are relatively small in everyday operational terms. However, the integration of the learning involved may take some time and it can be expected that there will be some further improvements as this information becomes part of individual thinking.

### *Organizational Climate*

The change in the level of the climate variables (increase is for the better) are all positive but by small amounts. The IC Intervention added some +2% over that of the Control Group while the contribution from WBL

Intervention was slightly negative reflecting the stress (and inefficiencies) in coping when working away from individually preferred styles as well as reflecting level of awareness and ability to find an alternative (potential) as they had learnt to take advantage of their differences. The dimensional differences before and after the interventions were significant including the Control Group, indicating an effect similar to that found in the “*Hawthorne*” studies. Also, the differences between the two interventions groups are small and probably not significant and may not be easily discernable in the everyday activities of the organization.

Overall, there was little change in climate during the conduct of the interventions, leading to the conclusion that all of the changes in personal and organizational performance, in terms of competencies, are predominantly due to the impact of ODIs and not to any change in the internal/external organizational environment.

#### *Management’s View*

A49 management’s view is that the interventions have not made any discernable change to the organization. This view can be expected from the small changes observed to date in both Climate and Competency variables. However, the problems outlined by the managers, when reconciled against the current findings, provide a more transformational view of the way forward for the organization. Two factors seem to be the cause of most of the problems; one concerns the external environment, the other the internal environment of the organization. These factors are:

- 1) The lack of any clear commercial understanding of the marketplace; e.g., falling revenue, other opportunities, threats from competitors, and the needs of the customers (currently seen as price-insensitive)

- 2) The role of leadership (generally misunderstood) when considering transformational change to the organization. Here the leader’s prime task is to ensure that a vision of the future position for the organization

is produced, communicated, understood, and committed to by all members of the organization, particularly managers (senior and junior) of the various organizational groups.

Currently, the values of the organization are considered to be *Loyalty*, *Quality*, and *Ethics*, with an emphasis on conceptual design and an acceptance of poor time management which, when reflected in the culture of the organization, do not offer the individual much guidance as far as transformational change is concerned. The lack of emphasis on adhering to project time scales suggests a lack of urgency in pursuing both customer and organizational projects. This is reflected in the time taken to introduce CAD as a contributor to greater efficiency in the organization. Kotter (1999) studied some 100 organizations pursuing transformational change and found “well over 50%” (p. 77) failed to establish sufficient sense of urgency to ensure success of the project.

#### *Recommendations*

This study found many misalignments in the organization. Therefore, it is recommended that management considers two further OD Interventions; the first to address primary organizational issues (*Strategic Direction* and associated *Human Resources*) that were found lacking by this study; the second to address aspects of *the Human Process* and *Technology/Structure* that need to be aligned to fit within the organizational framework as illustrated in Figure 2 (see Appendix A).

To maintain alignment, iterating around the four systems that comprise the organizational framework is essential. This ensures that improvement in any one system aligns with all others. It should be the Organization’s Purpose then to iterate across the other quadrants in the same way as WBL iterates across the four style quadrants to solve complex situations elegantly. When these process cycles form part of the organization’s normal functioning and change programs persist, then Organization Development becomes institutionalized.

As was made clear during the management interviews, A49's work focuses on architectural conceptual design with a Uniqueness Differentiation Strategy; which enable them to command fees than their competitors. They also realized that A49's proposals have been rejected by clients many times in the past because of those higher fees. Management believes, however, that there will still be customers willing to choose them because of their product uniqueness and would still be willing to pay higher fees.

They assume that there will be sufficient willing customers to maintain their income projections in this highly competitive market. If these projections were not to be met then A49 needs to reconsider its strategy and find a way to deal with customers who need higher value for money, which in turn means that A49 needs to be more efficient in all aspects of its activity

To be more market and customer-oriented, the management should consider the followings recommendation:

a) To consult a broad range of international/national clients to determine the strengths and weaknesses of A49's presence and product offerings in the marketplace. In particular, review design automation and the way commercial relationships with customers are managed.

b) To produce and communicate a detailed commercial and organizational strategy (based on an analysis of the way the organization serves the markets). The project should involve managers and staff so as to generate agreement and commitment to the best way forward. This will help increase the *Clarity of Purpose* and reduce any lack of fit between *personal* and *organizational-goals*.

For example, the aims of the business should be to maintain a strategy of differentiation through Uniqueness of conceptual design which may mean having a smaller staff and move organizationally toward becoming a Conceptual Design Studio. Or, should new supportive business units be established, these units could

provide a separate income stream as well as help the core business to accomplish other projects that need specific special skills rather than conceptual design skills.

It may be necessary to co-opt members from outside the organization to ensure that a diversity of ideas are made available for consideration.

#### *Recommendations regarding HR Management Issues*

The findings show that most of the people at A49's have the same Thinking Preferences and Learning Style. This is due to the recruitment criteria of the organization whose individuals have a preference for conceptual design. If the organization adopts a different strategic plan there will be a need for the development of manpower planning to reconcile the differences between the current skills and staff levels with those required for the future organization. Therefore, management needs to consider the following recommendations:

a) Recruitment needs to be more focused on hiring people who have skills appropriate to any new strategy. These skills may include detailed design and other functions, which are not directly architects' jobs (e.g., project planning and budgeting). These people may be not architecture professionals but could be persons from other specializations that are required to match the tasks required by the new strategy.

b) At a more tactical level, in the immediate future, management should ensure that *Exit Interviews* are conducted to determine the reasons why any staff member leaves the organization.

In addition, both management and leadership roles should be practiced by all managers. For the more senior managers, however, the leadership role should also be concerned with encouraging interpersonal communication and gaining commitment to a vision of the future. The researcher recommends Coaching and Training/Development as a priority Human Process Intervention to assess interactions and devise more effective ways of working, as well as to be aligned with other OD Interventions.

Coaching aims to develop new behavioral skills associated with leadership development as well as to assist in executing a transition where leadership skills will be at a premium. As to Training/Development, it aims to develop or change the skills and knowledge of employees in order to improve effectiveness as well as build other capabilities in addition to conceptual design. This can be achieved by giving junior architects the opportunity to participate in management meetings to bring fresh ideas as well as to increase involvement and commitment to any resulting decisions

#### *Recommendations regarding Technology: Structural Issues*

To be successful in managing change or diversity, A49 needs Management Commitment as well as Employee Involvement. In this respect, the researcher recommends Restructuring Organizations and Employee Involvement as priority Techno-structural Interventions to reduce any existing organizational issues as well as to be aligned with other OD Interventions. This will serve several purposes:

a) Restructuring Organizations aligns the organization's strategies and organization structures. Today's turbulent environment tends towards a change from Hierarchical to Flat structures and managers change from Scorekeepers to Leaders.

b) Employee Involvement aligns the organization's strategies with rewards by encouraging employees to input their views on decisions that affect organizational performance and employee well-being. Thus reward-extension plays a role where opportunities for internal and external rewards are tied to effectiveness.

c) Work Design may need to be considered as a central component of many Employee Involvement interventions. A49 needs enough diversity to efficiently meet project requirements. While the market defines product requirements organizational purpose the

management defines the extent of the product range. In turn Core Job requirements need to align with other OD Interventions and organizational issues.

d) Consider the use of an organization-wide Project Control System to ensure that all projects adhere to agreed resource and timescale budgets. Make available detailed information on project performance to all project staff.

e) Senior management should develop a Financial Plan to cover the next two years to ensure that income is sufficient and expenditure is controlled throughout any organizational transition.

Lastly it should be recognized that it is of no use to train others in the organization if there is no sense of purpose of goals to be achieved.

#### *Recommendations for Future Research*

One of the findings of this study shows that the contribution from the WBL Intervention was slightly negative on group learning. Therefore, this could be one area to pursue for further research to better understand of the use of WBL in learning systems.

Last but not least, it is hoped that this study is of benefit to those who are interested in the impact of WBL and IC Interventions on the Competence-Based Performance of individuals and groups in the organizations. The knowledge and understanding of diversity of style and the way people learn helps in the handling of communication conflicts and supports competency development. Organizations can be optimized if we understand and take advantage of individuals with different preferences (where all four quadrants are represented). This is similar to the best football team which not only has the best players, but also has good players in every position. However team performance depends on good leadership from the team manager. This kind of knowledge and capability helps to manage and transform self, others, teams, organizations and even nations, and the world.

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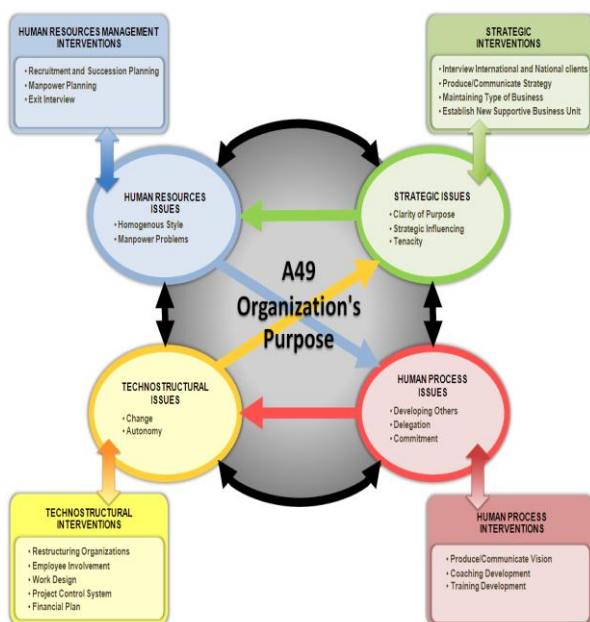
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## Appendix A

Figure 2: Iterative OD Process Model for Organizational Continuous Improvement and Sustainable Development for A49



Source: Adapted and integrated from Cumming & Worley (2005) and Tayko (2007) by Virachai